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CASE OF CEREBRAL TUMOR INVOLVING THE FACIAL CENTRE: AUTOPSY.¹

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THE patient was first seen by me at the Massachusetts General Hospital August 29, 1888, where he remained a short time under treatment in the Out-Patient Department. While there he was also seen by Drs. Putnam and M. H. Richardson. Previous to this time he was under the care of Dr. Horace Marion, under whose charge he came again later and up to the time of his death. He was also for a short time under the charge of Dr. E. N. Whittier.

Dr. Marion was fortunate enough to secure the autopsy which established the correctness of the diagnosis. To proceed in chronological order, I will first quote from Dr. Marion's notes:—

“J. H. G., forty years of age. Was first seen for the present illness April 24, 1888, late at night. He was in a dazed condition, and from the description given me I had no doubt that he had had a convulsion. As his habits had been for some time irregular, especially as to drinking, I explained the necessity of abstaining from all stimulants, and told him to let me know if he had further trouble. August 22nd he came to my office from his work, where he had just been seized with a convulsion. There was left facial paralysis and impaired motion,

¹ Read before the Society for Medical Improvement, February 25, 1889.

also a slight paralysis of the left arm. It seemed that after I saw him in April he went to Chicago, and there had one or two slight attacks of convulsions. This was the second one since his return, making in all up to this time, five, and this leaving some paralysis. During the following three days he had several slight convulsive attacks. No positive specific history could be obtained, but I put him on large doses of iodide of potash. In my absence from town for a week at this time, he went to the Massachusetts General Hospital."

It was at this time that he came under my observation, when I made the following notes:—

Patient's history (somewhat inaccurate).—He was always perfectly well until about six weeks ago, when he went to bed feeling perfectly well and on waking up found the doctor there. He felt dazed and as if he had lost consciousness, but went to his work that day as usual. His wife said that he was purple in the face and she thought he was in a fit, this condition having passed away before the arrival of a doctor. He felt perfectly well after this until nine days ago. Then he was at work, when he was seen to stagger against a wall, and was caught before he fell. He was unconscious for twenty minutes; he was purple in the face and bit his tongue. His arms are still lame and discolored from his struggles. When he came to, he was confused for a little while and went to bed. The next morning he went to work as usual, noticing nothing out of the way. The following day he had another attack while at work, feeling a premonition of the attack in a quivering of the lips; was unconscious only a short time. Five days ago he had another severe attack, which was followed by paralysis of the left side of the face.

There has been no special headache or vomiting. No specific history could be obtained.

Physical examination: — A strong, healthy-looking man, of good intelligence. No paralysis of motion or sensation in arms or legs, no disturbance of nutrition, an exaggerated knee-jerk on both sides but no ankle clonus. No optic neuritis. Heart normal. There is well-marked paralysis of the lower facial muscles on the left, also well-marked deviation of the tongue, the point to the left, the body of the tongue to the right. The left pupil is slightly larger than the right, both react well to light and to accommodation. There is no double vision in either direction, no paralysis of ocular muscles but a slight oscillation of the globe of the eye when turned slowly in any direction. Faradic reaction is very slightly diminished in the left side, both in the trunk of the facial nerve and in all branches, upper and lower. Careful examination shows that the left lid opening is wider than the right, and that the left frontal muscles do not move quite so strongly as the right. The levator labii superioris on the left contracts to localized irritation as well as the right.

A convulsive attack in the hospital, which I was fortunate enough to see, commenced with a fixed look, with perhaps a slight dilatation of the pupils; the head then turned violently over the left shoulder, followed by convulsive movements of the orbicularis palpebrarum, zygomatici, orbicularis oris, and platysma myoides, all on the left. There was no complete loss of consciousness, the patient repeatedly nodding his head when asked if he understood what was said to him, he being, however, himself unable to speak. The attack lasted two and one-half minutes, and was followed by slight thickness of speech and difficulty in collect-

ing his ideas, not specially marked. The pupils reacted perfectly to light directly after the attack, and were practically equal. There were no convulsive movements of the arm, the patient striking his face repeatedly, as if to avert the convulsion, first with one hand, then with the other, using either equally well.

The diagnosis was made of a cortical or subcortical tumor in the region of the facial centre; character uncertain. Operation was advised, but declined because cure could not be assured, and the operation not warranted to be free from danger. He was put upon moderate doses of bromide of sodium and ninety grains daily of iodide of potassium.

To return to Dr. Marion's notes: "I heard nothing more of him until September 17th, when I was again called to see him. After remaining a fortnight at the hospital, he consulted Dr. E. N. Whittier, and for the week he was under his care he had no convulsions. Previous to this, and ever since I saw him in August, he had had many. All the time he was losing ground. At this time (September 17) there was complete paralysis of the left side, absence of all reflexes, pupils alike. He knew me, and answered questions correctly when he could do so by yes and no, dropping off into deep sleep at once. On the 15th he had been in town with his boy to purchase some clothing; fell from the sidewalk; said to have been crowded off, and not to have had a convulsion. On the 16th he was very drowsy, and on the 17th he slept all the time. At this time the only hope held out to his family was that of a surgical operation, and they were urged to again take him to the hospital. On the 18th he could scarcely be roused at all. On the 19th Dr. Whittier saw him with me. He was

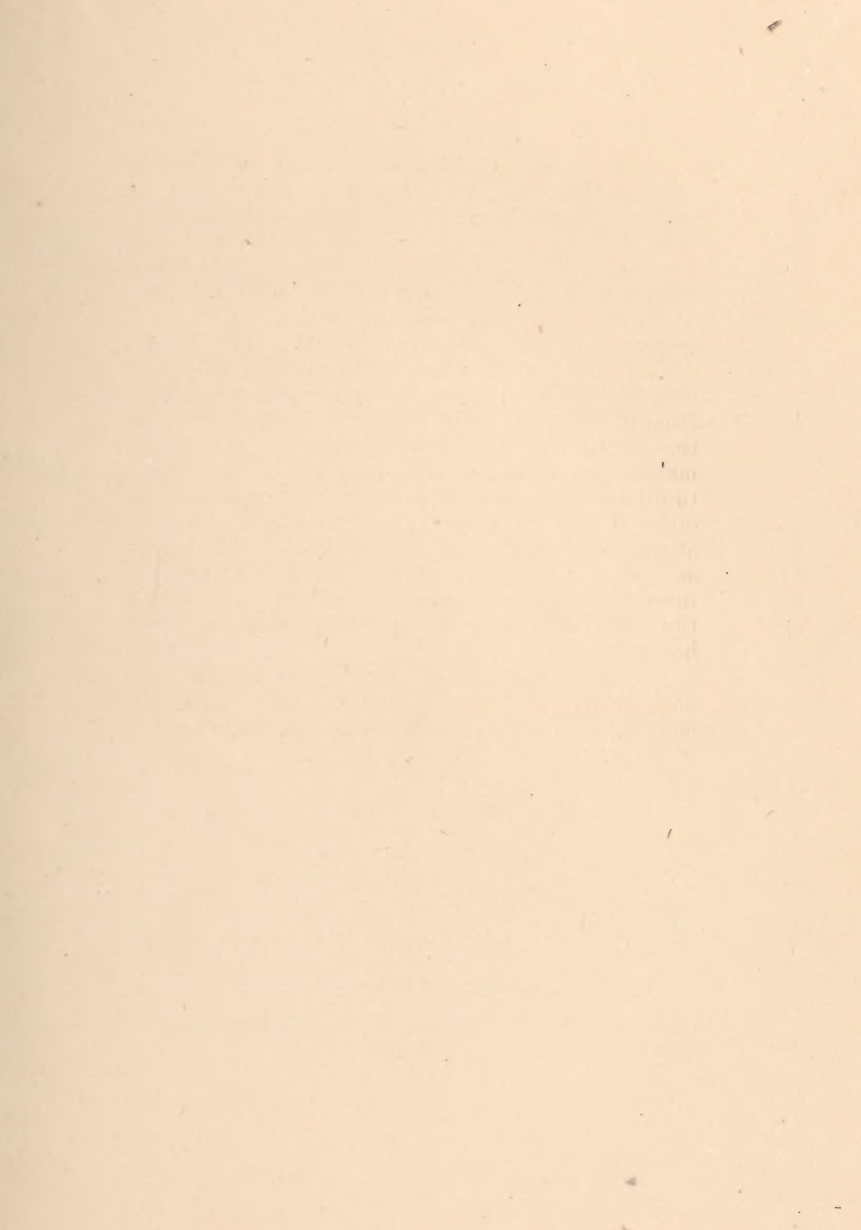
profoundly comatose, with involuntary micturition, etc. The family was again told that the only chance offering anything was surgical interference. This was positively declined. He died on the morning of the 20th."

The brain, prepared by Dr. Whitney with chloride of zinc, shows in the right hemisphere a sub-cortical, infiltrating tumor of softer consistency than the surrounding brain tissue, irregularly rounded in shape. It extends from under the middle of the fissure of Rolando downwards for about two centimetres, forwards through the ascending frontal convolution (ending at the posterior extremity of the middle frontal convolution), and backwards through the ascending parietal, its entire length being about three centimetres. The greatest depth of the tumor inwards is about four centimetres, extending nearly half-way to the mesial surface of the hemisphere, these measurements being taken after hardening of the brain. The edges of the tumor are in some places fairly well defined, at others quite indefinite, the tumor merging gradually into normal brain substance. It nowhere reaches the surface of the brain, approaching it at one point very nearly. The membranes were not adherent, nor in any way abnormal, the surface of the convolutions showing nothing distinctive. Microscopic examination by Dr. Whitney showed the characteristic appearance of glioma.

The post-mortem result shows that operation would have been unsuccessful, if attempted, although this could not have been determined during life, and the symptoms were those imperatively demanding the attempt; that is to say, we had to do with a tumor at or near the cortex, causing irritative, as well as paralytic symptoms, localized in character, and in a region well established as a motor centre,

both by physiological experiment and by pathological observation. An interesting point with regard to localization is brought out by this case, in that the convulsion was ushered in by rotation of the head to the opposite side. The centre for this movement is not absolutely established in man, but in the monkey it has been shown to be at the posterior extremity of the superior and middle frontal convolutions. The tumor might easily have caused irritation of this region, or of the fibres proceeding from it, more especially the middle frontal convolution. Stimulation of the corresponding area in the monkey causes the eyes to open widely, the pupils to dilate, and the head and eyes to turn toward the opposite side (Ferrier). This practically took place at the commencement of the convulsion witnessed at the hospital. The eyes, however, were not rotated violently to the left, but looked in the direction the face was pointing during rotation of the head.

The case reported by Dr. Putnam at the same meeting tends to corroborate the view that the centre for rotation of the head is situated similarly in man and in the monkey.



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